

### ***Team Meeting #21 Agenda, 2/23/21***

- Prototyping
  - Shaft machining update and screw size for motor mounting plate
  - 3D design
    - Swapping front handle guard for “battery pack” style handle component
  - 3D part printing
    - Use of the Eiger software
    - Clip parts for Ryan
  - Shaft gritting
    - Sandblasting may not work; we should come up with a better way to grit our tooltip
    - Could we purchase tool bits from somewhere online and incorporate them?
  - Electronics
    - Adafruit order
  - Anything else?

### ***Team Meeting #21 Minutes, 2/23/21***

- Prototyping
  - Shaft Machining Update and Screw Sizing
    - Yesterday, Ryan was able to take the prototype to Bill and figure out the screw size that will mate with the motor plate inside of the device
    - Lucas was able to get an output shaft quote from Bill, totaling \$250 for all parts involved
    - Bill mentioned that our idea to sandblast a grit into the output shaft is unlikely to work, as sandblasting will likely smooth the shaft rather than grit it
      - Talking through possible solutions led us to knurling, EDM machining, and using commercial shaft bits if possible. However, these would require design and therefore cost updates from the shop
  - 3D Design and Part Printing
    - Dr. Perry explained the Eiger software to Jett and Maclean so that they would be able to begin printing parts for the device, as well as how to reinforce them
    - We have decided to incorporate our front handle guard for the handle, and using it as a location for vacuum tubing for suction
    - The Adafruit components to build the final circuit have arrived. Jett will pick them up after this meeting to begin constructing the final circuit
- Testing Tip Design and Discussion
  - Now that we are ready to begin machining the final device components, we need to figure out the logistical challenges of creating our gritted tooltip
  - We proposed creating a test bit that we can swap out manually, using our current output shafts and creating a drill-press insert to plug in rotary burs, such as these:
    - <https://www.riogrande.com/product/diamond-bur-variety-set-15mm-120-grit/346063>
    - Lucas ordered these parts
  - This will allow us to test our current device while we find a machine shop that has the capability to create final gritted surfaces for our use.
    - We discussed using a knurl as well, but decided that it would create more of a rasp than a sanding platform

- To keep our output shaft aligned, we discussed using a mounted ball bearing near the output shaft interface
- We asked Bill to begin machining our parts
- Ryan will finish the shelf inside of the handle, and we will be ready to begin printing the housing